AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A method~~, performed by a processing system,~~ for evaluating customer value to guide loyalty and retention programs comprising:

generating, by a processing system, a hazard function model based on attributes relating to a plurality of current customer accounts;

generating, by the processing system, a hazard function for an existing customer, to determine probability of churn, based on the hazard function model and account data associated with the customer and corresponding to the attributes;

calculating a gain in lifetime value for the customer based on a change in the hazard function resulting from a retention effort; and

determining a focus for retention-based interactions with the customer based on at least one of the hazard function and gain in lifetime value.

2. (Previously presented) The method of claim 1, wherein calculating the gain in lifetime value includes:

calculating a lifetime value based on original contract terms and revenue associated with the customer; and

calculating the gain in lifetime value based on a change in the hazard function resulting from a new contract period.

3. (Previously presented) The method of claim 1, wherein determining a focus for retention-based interactions with the customer includes:

analyzing the shape of the hazard function generated for the customer; and

specifying a set of marketing techniques based on the shape of the hazard function.

4. (Previously presented) The method of claim 1, wherein determining a focus for retention-based interactions with the customer:

specifying a set of incentives to offer the customer based on the gain in lifetime value.

5. (Original) The method of claim 3, wherein specifying the set of marketing techniques based on the shape includes:

determining, based on the shape of the hazard function, there is no effect on churn of a contract expiration.

6. (Original) The method of claim 5, wherein specifying the set of marketing techniques includes:

taking no further steps to deter churn.

7. (Original) The method of claim 3, wherein specifying the set of marketing techniques based on the shape includes:

determining, based on the shape of the hazard function, that there is a small increase in probability of churn at contract expiration, with an elevated post-expiration churn.

8. (Original) The method of claim 7, wherein specifying the set of marketing techniques includes:

having a moderate pre-expiration effort where new contracts or continued contracts are the goal.

9. (Previously presented) The method of claim 3, wherein specifying the set of marketing techniques based on the shape includes:

determining, based on the shape of the hazard function, that there is a large spike indicating high probability of churn at contract expiration and low probability of churn thereafter.

10. (Original) The method of claim 9, wherein specifying the set of marketing techniques includes:

concentrating effort on pre-expiration of contract where a contract renewal may not be required.

11. (Original) The method of claim 3, wherein specifying the set of marketing techniques based on the shape includes:

determining, based on the shape of the hazard function, that there is a large increase in probability of churn at expiration with high and increasing post-expiration probability of churn.

12. (Previously presented) The method of claim 11, wherein specifying the set of marketing techniques includes:

specifying a high intensity pre-expiration effort with continued competitive offers to maintain the customer.

13. (Previously presented) The method of claim 4, wherein specifying the incentives includes:

determining that a value of the set of incentives offered to the customer does not exceed the gain in lifetime value.

14. (Previously presented) The method of claim 1, wherein determining a focus for retention-based interactions with the customer includes:

clustering the hazard function for the customer and hazard functions for a plurality of other existing customers so that the hazard functions are grouped together according to shape, each group representative of a customer set.

15. (Previously presented) The method of claim 14, wherein determining a focus for retention-based interactions with the customer includes:

determining, based on the overall shape of the clustered hazard functions, a focus for retention-based interactions for each customer set.

16. (Previously presented) An apparatus for evaluating customer value to guide loyalty and retention programs comprising:

a calculating module for generating a hazard function model based on attributes relating to a plurality of current customer accounts;

a generating module for generating a hazard function for an existing customer, to determine probability of churn, based on the hazard function model and account data associated with the customer and corresponding to the attributes;

a calculating module for calculating a gain in lifetime value for the customer based on a change in the hazard function resulting from a retention effort; and

a determining module for determining a focus for retention-based interactions with the customer based on at least one of the hazard function and the gain in lifetime value.

17. (Previously presented) The apparatus of claim 16, wherein the calculating module for calculating the gain in lifetime value

calculates a lifetime value based on original contract terms and revenue associated with the customer; and

calculates the gain in lifetime value based on a change in the hazard function resulting from a new contract period.

18. (Previously presented) The apparatus of claim 16, wherein the determining module includes:

an analyzing module for analyzing the shape of the hazard function generated for the customer; and

a specifying module for specifying a set of marketing techniques based on the shape of the hazard function.

19. (Previously presented) The apparatus of claim 16, wherein the determining module includes:

a specifying module for specifying a set of incentives to offer the customer based on the gain in lifetime value.

20. (Original) The apparatus of claim 18, wherein the specifying module for specifying the set of marketing techniques based on the shape includes:

a determining module for determining, based on the shape of the hazard function, there is no effect on churn of a contract expiration.

21. (Previously presented) The apparatus of claim 20, wherein the specifying module specifies taking no further steps to deter churn.

22. (Original) The apparatus of claim 18, wherein the specifying module for specifying the set of marketing techniques based on the shape includes:

a determining module for determining, based on the shape of the hazard function, that there is a small increase in probability of churn at contract expiration, with an elevated post-expiration churn.

23. (Previously presented) The apparatus of claim 22, wherein the specifying module specifies a moderate pre-expiration effort where new contracts or continued contracts are the goal.

24. (Previously presented) The apparatus of claim 18, wherein the specifying module for specifying the set of marketing techniques based on the shape includes:

a determining module for determining, based on the shape of the hazard function, that there is a large spike indicating high probability of churn at contract expiration and low probability of churn thereafter.

25. (Previously presented) The apparatus of claim 24, wherein the specifying module specifies concentrating effort on pre-expiration of contract where a contract renewal may not be required.

26. (Original) The apparatus of claim 18, wherein the specifying module for specifying the set of marketing techniques based on the shape includes:

a determining module for determining, based on the shape of the hazard function, that there is a large increase in probability of churn at expiration with high and increasing post-expiration probability of churn.

27. (Previously presented) The apparatus of claim 26, wherein the specifying module specifies a high intensity pre-expiration effort with continued competitive offers to maintain the customer.

28. (Currently amended) The apparatus of claim 19, wherein the specifying module includes a determining module for determining that a value of the set of incentives does not exceed the gain in lifetime value.

29. (Previously presented) The apparatus of claim 16, further comprising:

a clustering module for clustering the hazard function for the customer and hazard functions for a plurality of other existing customers so that the hazard functions are grouped together according to shape, each group representative of a customer set.

30. (Currently amended) The apparatus of claim 29, wherein the determining module[[:]] determines, based on the overall shape of the clustered hazard functions, a focus for retention-based interactions for each customer set.

31. (Previously presented) A computer-readable medium including instructions, executable by a processor, for performing a method for evaluating customer value to guide loyalty and retention programs, the method comprising:

generating a hazard function model based on attributes relating to a plurality of current customer accounts;

generating a hazard function for an existing customer, to determine probability of churn, based on the hazard function model and account data associated with the customer and corresponding to the attributes;

calculating a gain in lifetime value for the customer based on a change in the hazard function; and

determining a focus for retention-based actions based on at least one of the hazard function and gain in lifetime value.

32. (Previously presented) The computer-readable medium of claim 31, wherein calculating the gain in lifetime value includes:

calculating a lifetime value based on original contract terms and revenue associated with the customer; and

calculating the gain in lifetime value based on a change in the hazard function resulting from a new contract period.

33. (Previously presented) The computer-readable medium of claim 31, wherein determining a focus for retention-based actions includes:

analyzing the shape of the hazard function generated for the customer; and

specifying a set of marketing techniques based on the shape of the hazard function.

34. (Previously presented) The computer-readable medium of claim 31, wherein determining a focus for retention-based actions includes:

specifying a set of incentives offered to the customer based on the gain in lifetime value.

35. (Original) The computer-readable medium of claim 33, wherein specifying the set of marketing techniques based on the shape includes:

determining, based on the shape of the hazard function, there is no effect on churn of a contract expiration.

36. (Original) The computer-readable medium of claim 35, wherein specifying the set of marketing techniques includes:

taking no further steps to deter churn.

37. (Original) The computer-readable medium of claim 33, wherein specifying the set of marketing techniques based on the shape includes:

determining, based on the shape of the hazard function, that there is a small increase in probability of churn at contract expiration, with an elevated post-expiration churn.

38. (Original) The computer-readable medium of claim 37, wherein specifying the set of marketing techniques includes:

having a moderate pre-expiration effort where new contracts or continued contracts are the goal.

39. (Previously presented) The computer-readable medium of claim 33, wherein specifying the set of marketing techniques based on the shape includes:

determining, based on the shape of the hazard function, that there is a large spike indicating high probability of churn at contract expiration and low probability of churn thereafter.

40. (Original) The computer-readable medium of claim 39, wherein specifying the set of marketing techniques includes:

concentrating effort on pre-expiration of contract where a contract renewal may not be required.

41. (Original) The computer-readable medium of claim 33, wherein specifying the set of marketing techniques based on the shape includes:

determining, based on the shape of the hazard function, that there is a large increase in probability of churn at expiration with high and increasing post-expiration probability of churn.

42. (Previously presented) The computer-readable medium of claim 41, wherein specifying the set of marketing techniques includes:

specifying a high intensity pre-expiration effort with continued competitive offers to maintain the customer.

43. (Previously presented) The computer-readable medium of claim 34, wherein specifying the incentives includes:

determining that a value of the set of incentives does not exceed the gain in lifetime value.

44. (Previously presented) The computer-readable medium of claim 31, wherein determining a focus for retention-based actions includes:

clustering the hazard function for the customer and hazard functions for a plurality of other existing customers so that the hazard functions are grouped together according to shape, each group representative of a customer set.

45. (Previously presented) The computer-readable medium of claim 44, wherein determining a focus for retention-based actions includes:

determining, based on the overall shape of the clustered hazard functions, a focus for retention-based actions for each customer set.

46. (Previously presented) A system for evaluating customer value to guide loyalty and retention programs comprising:

means for generating a hazard function model based on attributes relating to a plurality of current customer accounts;

means for generating a hazard function for an existing customer, to determine probability of churn, based on the hazard function model and account data associated with the customer and corresponding to the attributes;

means for calculating a gain in lifetime value for the customer based on a change in the hazard function; and

means for determining a focus for retention-based actions based on at least one of the hazard function and the gain in lifetime value.

47. (Previously presented) The system of claim 46, wherein the means for calculating the gain in lifetime value includes:

means for calculating a lifetime value based on original contract terms and revenue associated with the customer; and

means for calculating the gain in lifetime value based on a change in the hazard function resulting from a new contract period.

48. (Previously presented) The system of claim 46, wherein the means for determining includes:

means for analyzing the shape of the hazard function generated for the customer; and

means for specifying a set of marketing techniques based on the shape of the hazard function.

49. (Previously presented) The system of claim 46, wherein the means for determining includes:

means for specifying a set of incentives to offer the customer based on the gain in lifetime value.

50. (Previously presented) The system of claim 48, wherein the means for specifying the set of marketing techniques based on the shape includes:

means for determining, based on the shape of the hazard function, that there is no effect on churn of a contract expiration.

51. (Previously presented) The system of claim 50, wherein the means for specifying the set of marketing techniques specifies taking no further steps to deter churn.

52. (Previously presented) The system of claim 48, wherein the means for specifying the set of marketing techniques based on the shape includes:

means for determining, based on the shape of the hazard function, that there is a small increase in probability of churn at contract expiration, with an elevated post-expiration churn.

53. (Previously presented) The system of claim 52, wherein the means for specifying the set of marketing techniques specifies a moderate pre-expiration effort where new contracts or continued contracts are the goal.

54. (Previously presented) The system of claim 48, wherein the means for specifying the set of marketing techniques based on the shape includes:

means for determining, based on the shape of the hazard function, that there is a large spike indicating high probability of churn at contract expiration and low probability of churn thereafter.

55. (Previously presented) The system of claim 54, wherein the means for specifying the set of marketing techniques specifies concentrating effort on pre-expiration of contract where a contract renewal may not be required.

56. (Original) The system of claim 48, wherein means for specifying the set of marketing techniques based on the shape includes:

means for determining, based on the shape of the hazard function, that there is a large increase in probability of churn at expiration with high and increasing post-expiration probability of churn.

57. (Previously presented) The system of claim 56, wherein the means for specifying the set of marketing techniques specifies a high intensity pre-expiration effort with continued competitive offers to maintain the customer.

58. (Previously presented) The system of claim 49, wherein the means for specifying the incentives includes:

means for determining that a value of the set of incentives does not exceed the gain in lifetime value.

59. (Previously presented) The system of claim 46, further comprising:

means for clustering the hazard function for the customer and hazard functions for a plurality of other existing customers so that the hazard functions are grouped together according to shape, each group representative of a customer set.

60. (Previously presented) The system of claim 59, wherein the means for determining a focus for retention-based actions includes:

means for determining, based on the overall shape of the clustered hazard functions, a focus for retention-based actions for each customer set.

61. (Currently amended) A method~~, performed by a multilayer feed-forward neural network,~~ for evaluating customer value to guide loyalty and retention programs comprising:

generating, by a multilayer feed-forward neural network, a hazard function for an existing customer, to determine probability of churn, based on account data associated with the customer and corresponding to a set of attributes;

calculating, for the customer, a gain in lifetime value based on a change in the hazard function resulting from a retention effort; and

determining a focus for a retention-based program based on at least one of the hazard function and the gain in lifetime value.

62. (Previously presented) The method of claim 61 further comprising:

implementing the program based on the determined focus.

63. (Currently amended) A method~~, performed by a processing system,~~ for evaluating customer value to guide loyalty and retention programs comprising:

generating, by a processing system and for each of a plurality of customers, a hazard function to determine a probability of churn for each customer, the hazard function based on attributes relating to customer account information;

identifying a temporal-based retention effort based on the hazard function for each of the plurality of customers;

calculating, for each of the plurality of customers, an expected gain in value from the identified retention effort; and

determining a focus for customer interaction based on the expected gain in value.

64. (Previously presented) The method of claim 63, wherein generating a hazard function comprises:

generating a hazard function, based on a reference hazard function model, for each of the plurality of customers.

65. (Previously presented) The method of claim 63, wherein the temporal-based retention effort comprises retention actions directed to each customer during a first time period and retention actions directed to each customer during a second time period occurring after the first time period.

66. (Previously presented) The method of claim 1, wherein calculating a gain in lifetime value based on a change in the hazard function resulting from a retention effort comprises calculating expected revenue multiplied by an increase in remaining lifetime resulting from the retention effort.

67. (Previously presented) The method of claim 16, wherein the calculating module calculates the gain in lifetime value based on a change in the hazard function resulting from a retention effort by calculating expected revenue multiplied by an increase in remaining lifetime resulting from the retention effort.

68. (Previously presented) The computer-readable medium of claim 31, wherein calculating a gain in lifetime value based on a change in the hazard function comprises calculating expected revenue multiplied by an increase in remaining lifetime resulting from a retention effort.

69. (Previously presented) The system of claim 46, wherein the means for calculating a gain in lifetime value calculates the gain in lifetime value based on a change in the hazard function by calculating expected revenue multiplied by an increase in remaining lifetime resulting from a retention effort.

70. (Previously presented) The method of claim 61, further comprising:

training the neural network to generate a hazard function model based on account data associated with a plurality of current customer accounts and corresponding to the set of attributes; and

wherein generating a hazard function includes generating a hazard function for an existing customer, to determine probability of churn, based on the hazard function model and the account data associated with the customer and corresponding to a set of attributes.

71. (New) The method of claim 70, wherein training the neural network comprises loading an input layer of the neural network with values representing the set of attributes for the plurality of current customer accounts.